

AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently amended) A drive apparatus for a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

an image signal accumulator that accumulates the intensity signals for a plurality of pixels to generate an accumulated intensity signal;

an accumulated value comparator that compares the accumulated intensity signal to a prescribed value; and

a charge recovery timing control circuit for controlling the length of a charge recovery period during a sustaining period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential based upon the results of said comparison.

Claim 2. (Previously presented) A drive apparatus for a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a brightness detection circuit for detecting a brightness so as to obtain screen brightness information; and

a charge recovery timing control circuit for controlling a charge recovery period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential, wherein said charge recovery timing control circuit controls said charge recovery period of said charge recovery circuit in response to said brightness information obtained by said brightness detection circuit,

wherein said brightness detection circuit comprises:

an image signal accumulator for accumulating a brightness of each pixel of said plasma display panel for each frame or for each field of an image signal; and

an accumulated value comparator for determining whether an accumulated value detected by said image signal accumulator is larger or smaller than a prescribed value.

Claim 3. (Original) A drive apparatus for a plasma display panel according to claim 2, wherein said image signal accumulator accumulates a brightness of all pixels in an effective display area of said plasma display panel.

Claim 4. (Original) A plasma display panel drive apparatus according to claim 2, wherein said image signal accumulator accumulates only a brightness of pre-established pixels within an effective display area of said plasma display panel.

Claim 5. (Original) A drive apparatus for a plasma display panel according to claim 2, wherein said charge recovery timing control circuit controls so that, when said accumulated value obtained by said image signal accumulator is lower than a prescribed value said charge recovery period is made relatively short, and further so that, when said accumulated value obtained by said image signal accumulator is higher than said prescribed value said charge recovery period is made relatively long.

Claim 6. (Previously presented) A drive apparatus for a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive

apparatus comprising:

a brightness detection circuit for detecting a brightness so as to obtain screen brightness information; and

a charge recovery timing control circuit for controlling a charge recovery period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential, wherein said charge recovery timing control circuit controls said charge recovery period of said charge recovery circuit in response to said brightness information obtained by said brightness detection circuit,

wherein said charge recovery timing control circuit controls to change said charge recovery period for only a sub-field that has a relatively large brightness weight, and to leave said charge recovery period for a sub-field having a relatively small brightness weight unchanged.

Claim 7. (Previously presented) A drive apparatus for a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a brightness detection circuit for detecting a brightness so as to obtain screen brightness information;

a charge recovery timing control circuit for controlling a charge recovery period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential, wherein said charge recovery timing control circuit controls said charge recovery period of said charge recovery circuit in response to said brightness information obtained by said brightness detection circuit; and

a pixel counting circuit for counting a number of pixels of a brightness exceeding a pre-established reference brightness, wherein in a case in which a value counted by said pixel counting circuit is below a pre-established value, said charge recovery timing control circuit controls so as to make said charge recovery period relatively long.

Claim 8. (Original) A drive apparatus for a plasma display panel according to claim 2, wherein said image signal accumulator accumulates a brightness of each pixel and then determines the average brightness.

Claim 9. (Currently amended) A drive apparatus for a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a power consumption detection circuit for measuring a power consumption of said plasma display panel; and

a charge recovery timing control circuit for controlling the length of a charge recovery period during a sustaining period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential based upon the power consumption.

Claim 10. (Currently amended) A method for driving a plasma display panel comprising a charge recovery circuit for re-using a recovered electrical charge, said method comprising:

accumulating the intensity for each pixel of said plasma display panel for each frame or for each field of an image signal and obtaining an accumulated value thereof;

comparing whether said value is larger or smaller than a prescribed value; and
changing the length of a charge recovery period during a sustaining period from a time
at which a charge recovery operation of said charge recovery circuit starts to a time of fixing
to a sustaining potential or a ground potential, in response to said comparison results obtained
in said comparing said value.

Claim 11. (Previously presented) The method according to claim 10, wherein said
accumulating the intensity for each pixel comprises accumulating the intensity of each pixel
in an effective display area of said plasma display panel.

Claim 12. (Previously presented) The method according to claim 10, wherein said
accumulating the intensity for each pixel comprises accumulating the intensity of pre-
established pixels within an effective display area of said plasma display panel.

Claim 13. (Previously presented) The method according to claim 10, wherein said
changing the length of a charge recovery period comprises controlling a charge recovery
timing so as to make said charge recovery period relatively long when said value accumulated
in said accumulating the intensity exceeds a threshold.

Claim 14. (Currently amended) A drive apparatus for a plasma display panel comprising
a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus
comprising:

an image signal accumulator that accumulates the intensity signals for a plurality of

pixels to generate an accumulated intensity signal;

an accumulated value comparator that compares the accumulated intensity signal to a prescribed value; and

a charge recovery timing controller for controlling the length of a charge recovery period during a sustaining period based upon said comparison.

Claim 15. (Previously presented) The drive apparatus for a plasma display panel according to claim 14, wherein said image signal accumulator accumulates the intensity of each pixel of said plasma display panel for each frame or for each field of an image signal.

Claim 16. (Previously presented) A drive apparatus for a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a brightness detector for detecting a brightness so as to obtain screen brightness information; and

a charge recovery timing controller for controlling a charge recovery period in response to said brightness information obtained by said brightness detector,

wherein said brightness detector further comprises:

an image signal accumulator for accumulating a brightness of each pixel of said plasma display panel for each frame or for each field of an image signal, and

an accumulated value comparator for determining whether an accumulated value detected by said image signal accumulator is larger or smaller than a prescribed value.

Claim 17. (Previously presented) The drive apparatus for a plasma display panel according to claim 15, wherein said image signal accumulator accumulates the intensity of all pixels in an effective display area of said plasma display panel.

Claim 18. (Currently amended) A method for driving a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said method comprising:

detecting an ~~the~~ accumulated intensity of said plasma display panel;
comparing the detected accumulated intensity with a threshold value; and
controlling a length of a charge recovery period during a sustaining period based upon the results of said comparison.

Claim 19. (Previously presented) The method for driving a plasma display panel according to claim 18, further comprising:

re-using a recovered electrical charge with a charge recovery circuit.

Claim 20. (Previously presented) The method according to claim 10, wherein, said controlling a charge recovery period comprises controlling the charge recovery period so as to make said charge recovery period relatively long when said value accumulated in said accumulating the intensity exceeds the threshold.

Claim 21. (New) A method for controlling a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a brightness detection circuit for detecting a brightness so as to obtain screen

brightness information; and

a charge recovery timing control circuit for controlling a charge recovery period in response to said brightness information obtained by said brightness detection circuit, said method comprising:

accumulating a brightness of each pixel of said plasma display panel for each frame or for each field of an image signal with an image signal accumulator; and

determining whether an accumulated value detected by said image signal accumulator is larger or smaller than a prescribed value with an accumulated value comparator.

Claim 22. (New) The method for controlling a plasma display panel according to claim 21, wherein said charge recovery period is a period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential.

Claim 23. (New) A method for controlling a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a brightness detection circuit for detecting a brightness so as to obtain screen brightness information; and

a charge recovery timing control circuit for controlling a charge recovery period in response to said brightness information obtained by said brightness detection circuit; said method comprising:

controlling to change said charge recovery period for only a sub-field that has a relatively large brightness weight; and

leaving said charge recovery period for a sub-field having a relatively small brightness weight.

Claim 24. (New) A method for controlling a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said drive apparatus comprising:

a brightness detection circuit for detecting a brightness so as to obtain screen brightness information; and

a charge recovery timing control circuit for controlling a charge recovery period in response to said brightness information obtained by said brightness detection circuit, said method comprising:

counting a number of pixels of a brightness exceeding a pre-established reference brightness with a pixel counting circuit; and

controlling so as to make said charge recovery period relatively long with said charge recovery timing control circuit, in a case in which a value counted by said pixel counting circuit is below a pre-established value.

Claim 25. (New) A method for controlling a plasma display panel comprising a charge recovery circuit that re-uses a recovered electrical charge, said method comprising:

measuring a power consumption of said plasma display panel with a power consumption detection circuit; and

controlling the length of a charge recovery period from a time at which a charge recovery operation of said charge recovery circuit starts to a time of fixing to a sustaining potential or a ground potential based upon the power consumption by a charge recovery

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timing control circuit.